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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,136	03/31/2004	Akinori Shibuya	Q80850	3725
23373	7590	09/27/2006		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER GILLIAM, BARBARA LEE	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/813,136

Applicant(s)

SHIBUYA, AKINORI

Examiner

Barbara L. Gilliam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 20, 2006 has been entered.

### ***Response to Amendment***

2. The amendment filed July 20, 2006 has been entered and fully considered.
3. Claims 1-9 are present of which claim 9 is new.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

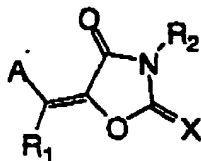
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 4 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murota et al. (EP 1 048 982 A1).

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- a. Murota teaches a photopolymerizable composition comprising (I) a



sensitizing dye represented by formula (III-1) , (II) a titanocene compound and (III) a compound which reacts with at least either a radical or acid to change and retain at a physical or chemical characteristics. In formula (III-1), A is an aromatic or heterocyclic ring, which may have a substituent; X is O, S or N(R<sub>3</sub>); R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> each represents a hydrogen atom or a monovalent non-metallic atomic group ([0018]). Murota teaches that aryl groups are preferred for R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub>, including phenyl and naphthyl which can be substituted. Specific examples of the preferred substituted aryl groups include chlorophenyl, bromophenyl, fluorophenyl, trifluoromethylphenyl, and carboxyphenyl ([0140]-[0141]). It is the examiner's position that when X is NR<sub>3</sub> and R<sub>3</sub> is one of the preferred substituted phenyl groups such as trifluoromethylphenyl, the limitations of claimed formula (2) are met.

b. *The examiner notes that US 6335144 B1 is the US equivalent of the cited reference to Murota. The said reference is also applicable under 35 USC 102(b). However for the sake of brevity, duplicates rejections will not be made herewith.*

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

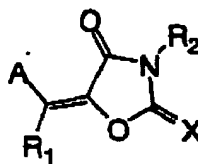
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murota et al. (EP 1048982 A1).

a. Murota teaches a photopolymerizable composition comprising (I) a



sensitizing dye represented by formula (III-1)

, (II) a titanocene

compound and (III) a compound which reacts with at least either a radical or acid to change and retain at a physical or chemical characteristics. In formula (III-1), A is an aromatic or heterocyclic ring, which may have a substituent; X can be N(R<sub>3</sub>); R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> each represents a hydrogen atom or a monovalent non-metallic atomic group (p. 0018). Murota teaches that aryl groups are preferred for R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub>, including phenyl and naphthyl. Specific examples of the preferred substituted aryl groups include chlorophenyl, bromophenyl, fluorophenyl, trifluoromethylphenyl, and carboxyphenyl ([0140]-[0141]). It is the examiner's position that when X is NR<sub>3</sub> and R<sub>3</sub> is one of the preferred substituted phenyl groups, the limitations of claimed formula (3) are met. Murota et al. teach increasing the sensitivity of the composition by adding cosensitizers such as compounds having a nitrogen-nitrogen bond specifically and preferably hexaarylbiimidazoles ([0185]). Therefore it would have been obvious to one of ordinary skill in the photosensitive art to incorporate a hexaarylbiimidazole\* compound into the

photosensitive composition taught in Murota et al. to increase sensitivity. \*Murota et al. misspelled hexaarylbiimidazoles as "hexaallybiimidazoles".

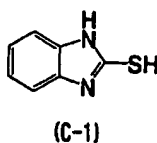
b. *The examiner notes that US 6335144 B1 is the US equivalent of the cited reference to Murota. The said reference is also applicable under 35 USC 103(c). However for the sake of brevity, duplicates rejections will not be made herewith.*

### **Response to Arguments**

8. Applicant's arguments filed July 20, 2006 have been fully considered but they are not persuasive.

a. Applicant argued Murota et al. is silent about the sum of the Hammett's values of the substituent group(s) on the substituted aryl group R6. There is no verbatim discussion in Murota et al. with respect to said Hammett's values however Murota et al. clearly teaches chlorophenyl, bromophenyl, fluorophenyl, trifluoromethylphenyl, and carboxyphenyl as preferred substituted aryl groups which according to Applicant have Hammett's values greater than 0.

b. Applicant argued the submitted declaration demonstrates unexpectedly superior results. The comparative data presented is not commensurate in scope with the claims. Independent claims 1 and 5 do not contain a cosensitizer as present in inventive example 5. Specifically 0.5g of cosensitizer C-1:



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is present in photosensitive composition. "Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the 'objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.'" MPEP 716.02. Additionally, the comparative data presented comprises a titanocene A-10 instead of compound A-5, hexaaryl biimidazole. According to Applicant the comparative example has poor safelight stability when compared to inventive Example 5. In the rejection under 103(a), the Examiner cited the teaching of Murota et al. to incorporate cosensitizers such as hexaarylbiimidazole (in addition to the titanocene) to increase sensitivity.

#### ***Allowable Subject Matter***

9. Claim 8 is allowed.


#### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara L. Gilliam whose telephone number is 571-272-1330. The examiner can normally be reached on Monday through Thursday, 8:00 AM - 5:30 PM.

a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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b. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Barbara L. Gilliam  
Primary Examiner  
Art Unit 1752

bg  
September 22, 2006